51. The mouse of claim 50, wherein said endonuclease is selected from the group consisting of I-*Sce*I, I-*Sce*IV, I-*Csm*I, and I-*Pan*I.

52. The mouse of claim 51, wherein said endonuclease is I-*Sce*I.

53. A transgenic mouse comprising a recombinant cell, wherein said cell comprises a nucleotide sequence, wherein said nucleotide sequence comprises a Group I intron encoded endonuclease recognition site.

54. The mouse of claim 53, wherein said endonuclease recognition site is selected from the group consisting of Class I I-endonuclease sites, Class II I-endonuclease sites, Class III I-endonuclease sites, Class IV I-endonuclease sites, and Class V I-endonuclease sites.

55. The mouse of claim 54, wherein said endonuclease recognition site is a Class I I-endonuclease site.

56. The mouse of claim 55, wherein said endonuclease recognition site is selected from the group consisting of I-*Sce*I, I-*Sce*IV, I-*Csm*I, and I-*Pan*I sites.

57. The mouse of claim 56, wherein said endonuclease recognition site is an I-*Sce*I site.

58. A method for generating transgenic cells comprising the steps of:

(a) providing a cell from a transgenic mouse in which at least one Group I intron encoded endonuclease recognition site is inserted at a unique location in a chromosome of said cell;

(b) providing said endonuclease to said cell;

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(c) providing a nucleotide sequence comprising a gene of interest and a DNA sequence homologous to the sequence of the chromosomal DNA, allowing homologous recombination;

(d) transforming the cell with the nucleotide sequence of step (c); and

(e) cleaving said endonuclease recognition site, whereby said cleavage promotes the insertion of said gene of interest into said chromosome of said cell at a specific site by homologous recombination.

59. The method of claim 58, wherein said endonuclease recognition site is selected from the group consisting of Class I I-endonuclease sites, Class II I-endonuclease sites, Class III I-endonuclease sites, Class IV I-endonuclease sites, and Class V I-endonuclease sites.

60. The method of claim 59, wherein said endonuclease recognition site is a Class I I-endonuclease site.

61. The method of claim 60, wherein said endonuclease recognition site is selected from the group consisting of I-*Sce*I, I-*Sce*IV, I-*Csm*I, and I-*Pan*I sites.

62. The method of claim 61, wherein said endonuclease recognition site is an I-*Sce*I site.

63. A method of culturing transgenic cells comprising the steps of:

(a) providing a cell from a transgenic mouse in which at least one Group I intron encoded endonuclease recognition site is inserted at a unique location in a chromosome of said cell; and

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(b) culturing said cell under conditions that allow growth of said cell.

64. The method of claim 63, wherein said endonuclease recognition site is selected from the group consisting of Class I I-endonuclease sites, Class II I-endonuclease sites, Class III I-endonuclease sites, Class IV I-endonuclease sites, and Class V I-endonuclease sites.

B' cont.

65. The method of claim 64, wherein said endonuclease recognition site is a Class I I-endonuclease site.

66. The method of claim 65, wherein said endonuclease recognition site is selected from the group consisting of I-*Sce*I, I-*Sce*IV, I-*Csm*I, and I-*Pan*I sites.

67. The method of claim 66, wherein said endonuclease recognition site is an I-*Sce*I site.

68. A method for the activation of a specific gene in a mouse cell comprising:

(a) inserting a nucleotide sequence comprising a Group I intron encoded endonuclease recognition site into the coding sequence of said gene, wherein said insertion inactivates expression of said gene;

(b) providing a Group I intron encoded endonuclease to said mouse cell; and

(c) cleaving said Group I intron encoded endonuclease recognition site, whereby said cleavage promotes activation of expression of said gene by homologous recombination.

69. The method of claim 68, wherein said endonuclease recognition site is selected from the group consisting of Class I I-endonuclease sites, Class II I-

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